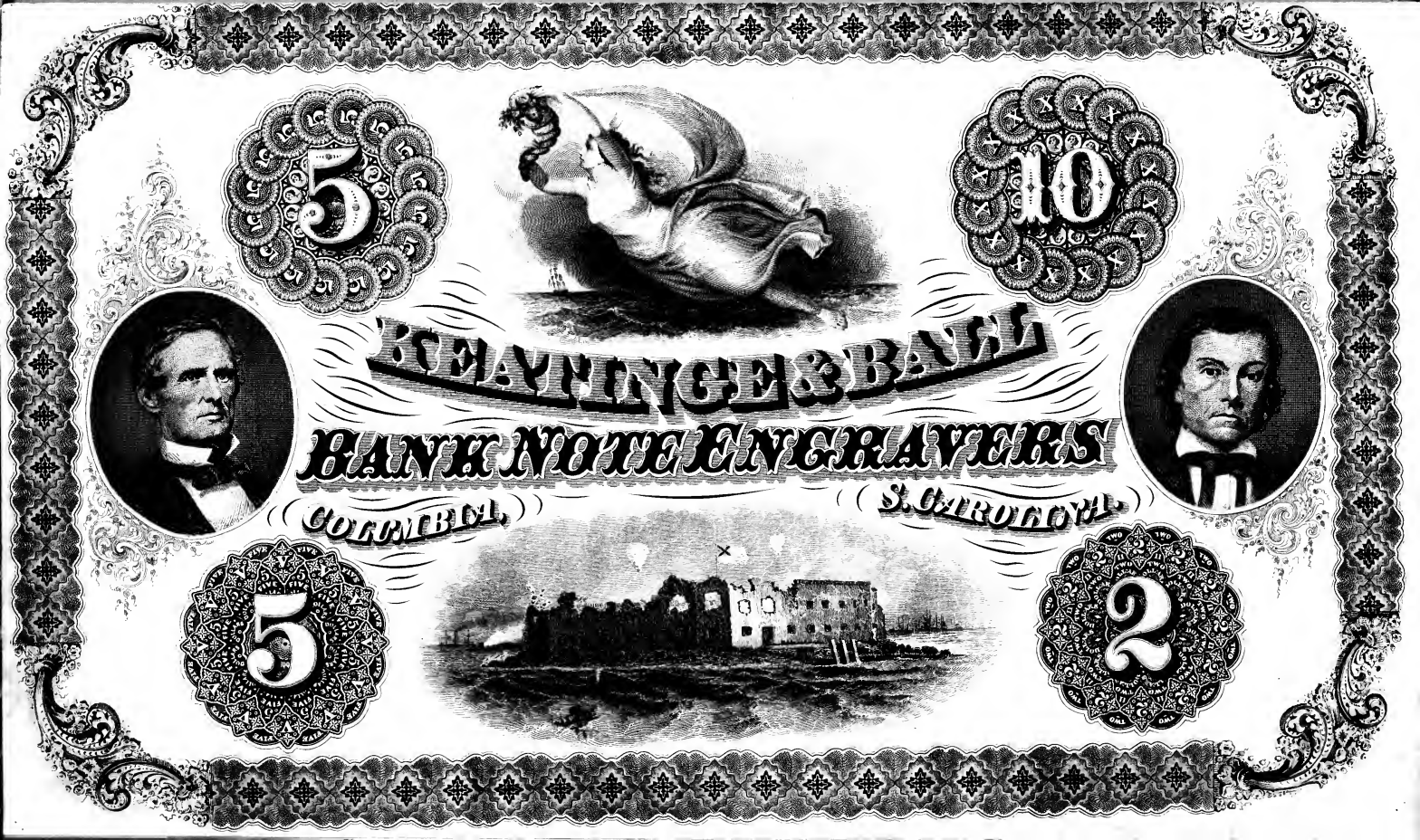
REMARKS
ON THE
MANUFACTURE OF BANK NOTES

COLUMBIA, S.C.
1864

George Washington Flowers
Memorial Collection

DUKE UNIVERSITY LIBRARY

ESTABLISHED BY THE
FAMILY OF
COLONEL FLOWERS


5
10
KEATINGE & BALL
BANK NOTE ENGRAVERS
COLUMBIA
S. CAROLINA
5
2

REMARKS

ON THE

MANUFACTURE OF BANK NOTES,

AND OTHER

PROMISES TO PAY.

ADDRESSED

TO THE

Bankers of the Southern Confederacy.

COLUMBIA, S. C.:
STEAM POWER-PRESS OF F. G. DEFONTAINE & CO.

1864.

Digitized by the Internet Archive
in 2011 with funding from
Duke University Libraries

http://www.archive.org/details/remarksonmanufac01keat

Con.
Pam
12mo
#408

CHAPTER I.

The worthy, witty and garrulous "Fray Antonia Agapida," tells us that a certain Count de Tendilla, being closely beset in the mountains of Granada, behind well battered walls, with an army clamorous for pay, and his affairs, as well as those of the brave Christian defenders of Alhama, in a bad way, struck upon a bright idea; one which shows to the world that the brave Catholic cavalier had, in addition to his ability for giving or taking hard knocks, a talent for finance, equalled only by the famous "Law," in the power of making something out of nothing, yet excelling that worthy in the redemption of his pledges.

The chronicler says that the Count took certain morsels of paper, and, writing the amount of the sum he wished them to represent, affixed his name, and ordered that the inhabitants of Alhama should take them in payment at the gold values represented, threatening the severest penalties to all who should refuse their reception. So (according to Fray Antonia) the newly-born *assignats*, *mandats*, or SHIN PLASTERS, had an excellent circulation; the soldiers' wants were relieved; nay, their extravagances supplied, the doubting were re-assured, the brave made

more brave, and "by a subtle and most miraculous kind of alchemy did this Catholic cavalier turn worthless paper into precious gold, and make his late impoverished garrison abound in money." The best of the joke, or experiment, was, that the brave Count redeemed his little notes; an example, I am sorry to say, that has not, in all cases, been followed by his more vulgar or more dishonest imitators. The worthy Father claims, however, for "the Count," the honor of being the first inventor of paper money, "which has since inundated the civilized world with unbounded opulence."*

Admitting that the Count de Tendilla was the father of a system eminently convenient, it becomes evident that writing the amounts, numbering and signing of bits or pieces of portable material, representing large or small sums, could not be continued successfully by those who adopted his discovery; and to meet a rapidly increasing want, and a still more rapidly growing desire to promise to pay instead of paying, mechanical appliances were pressed into that service.

For a long time (Faust nor Guttenberg had yet appeared) the engraving art was still confined to the "Niellatore," or the grotesque and rude cuttings on the drinking vessels of the great and wealthy; the followers of that art traveling from town to

---

* Irving's Conquest of Granada.

town, with the necessary delicate tools carried in the pocket or hat.

Passing over the long period when the kings of France, England, and other equally great monarchs, ignorant or careless of the honest Count's system, thumb-screwed Jews, and occasionally a Gentile or two, debased *their own* coin, and by clipping or other process rendered it nearly valueless. It was not until the time of the American Revolution that any step was taken in banking or the issuing of notes of indebtedness, whereby the security to the holder of such certificates was at all considered, or any protection to them provided. While the plastic arts were encouraged, nay, petted; while great painters, sculptors, and engravers were springing up, and a new Augustan age appeared to be dawning, the idea of applying art to commercial purposes seemed never to have been even thought of, commerce being too vulgar, or, perhaps, art too respectable.

It was in the midst of our grand struggle for independence that Franklin found time, from his lightning-catching, mail-carrying, diplomatizing and printing, to engrave, *en amateur*, a set, or several sets, of plates for the Continental money; and his work, much of which is still in existence, shows nothing more than the coarse, ill-drawn practice of the time, easily and frequently counterfeited, lessening in such proportion the value of what was legally issued. At the still later period of the French Revolution,

when Painter David divided his time with designs for *fêtes* to the Goddess of Reason, or to *l'être supreme*, making drawings and designs to be "at once classical and convenient" for military school-boys, and sending "aristocrats" and "respectabilities" to look through "the little window," while no less than three engravers sat in the National Assembly, the national *assignats* and *mandats* were hardly a shade better in appearance or execution than our own old Continental paper. The legend on the face, that "*le contrefaction est mort*," was supposed to be enough, and, as the powers that were had plenty of chances to prove that the threat on the face of the *assignat* was no idle one, they were satisfied. In fact, no provision was made to prevent counterfeiting, except by the English mode of choking the culprit with a hempen collar, or shortening by a head, like the French; until the rapidly developing prosperity of America, or rather of its several States, under the life-giving hand of Liberty, evoked a system, the benefit of which has long been felt by our commercial classes, and adopted by nations of the highest civilization, whenever they have experienced the want of a perfect paper currency.

To understand clearly what is meant by *proper protection* to the takers of promises to pay, whether the promise comes from an individual, from a corporation, or from a nation, through its authorized agents, the party or parties giving such promise is,

or ought to be, in possession, or constructive possession, of means to redeem such pledge or pledges; and as the said pledge or pledges may be passed from one hand to another, every security and certainty of the genuineness of such should be carefully added; for, while A may have no doubt of B's willingness and ability to fulfill his engagements, like the brave, hard-handed Count de Tendilla, both merchants, dwelling in the same street, or in the same city, or in cities thousands of miles apart, custom, commercial faith, and business relations they bear together, give each protection; the method of drawing on each other, signatures and other business intricacies, render both comparatively secure, and they liken to the "Count" in his relation to the people of Alhama; but when C, D, or E receives the carefully written document from A, in payment of his (A's) liabilities, what certainty have they that the engrossed and signed evidence of B's indebtedness is genuine, and good to them for the amount expressed on its face? Now, it is evident that some mechanical security is required here, and if a pledge to perform some obligation at a future day is made by a corporation, the genuineness of the bond is at once looked to, or it is taken on the good faith of the broker, who seems to act between the purchaser and the seller, additional guarantee is desired; and experience shows that corporations of the highest character have seldom missed an op-

portunity to prevent fraud, either against themselves or those dealing with them, by every available appliance, either in art, or mechanical science in connection with art. A merely written pledge, no matter how elaborately engrossed, and done by a single hand, is so exposed to counterfeiting, that no one would receive it with such security alone. Were it to be done simply by movable types, accessible in any ordinary printing-office, who would take it? Where would be the assurance that it was ever issued by the body from whom it professed to have emanated? If promises to pay from nations were now to be handed about, produced by some very short-handed process, the possession of some trifling material, and the handicraft skill, (the only difference between the counterfeiter and authorized agent being the authority of the latter to issue, and the punishment of death as a penalty for intruding on such authority,) what would the legal issues be taken for, and by whom, unless when force was applied? Of the transactions between individuals, there need be no further inquiry; to those between corporations and individuals, we must pay more particular attention.

In olden times, the evidences of transactions were carefully engrossed and signed by the masters and wardens of corporations, the chairmen of guilds, and were never issued without the seal of such corporation or guild. This is about the first

of the instances of the necessity of mechanical or clerical combination against the forger, independent of the lawfully required unity in the act of those issuing a bond. The carefully written document had no value without the joint signatures; the bond and signatures were still valueless without the seal. Thus, whether by accident or design, were walls put between the counterfeiter and his desire to defraud. In our own day, when education is almost universal, and material with which to do evil is easy of access, no corporation is satisfied with their own obligations, when put out freely, unless they have every security which law and art can give them, that the public may take their pledges without doubt, and that they themselves may be protected in turn; in addition to which, General Governments, doubting whether corporations have souls or not, take every possible safeguard to prevent an issue beyond the means of the corporation, and require that everything they issue, be it in the shape of a bond or in the likeness or similitude of a bank note, be prepared so as to prevent fraudulent imitation.

If it is necessary thus to guard against fraud, where the chances of its detection are abundant, how much more careful should General Governments be to protect those for whom they are the executors, particularly, where enormous sums are scattered broadcast, where every denomination is current, and

where the few cents of the laborer, and the five hundreds of the merchant prince, spring from the same source, be it a State, an assemblage of States, or a Kingdom?

The greater part of the civilized world has realized the fact and the importance of the approval and adoption of a system, which originating on this continent, and growing out of its prosperity, has been hailed as a success, and adopted as a security.

Soon after the American war, England, though still embroiled in a saturnalia of blood, was (commercially) exceedingly prosperous. The different States of America, emerging from a long and bloody struggle, with a new-found liberty, untrammelled by foreign alliance, an enormous domain, extensive sea-coast, and a hardy and self-reliant people, experienced business prosperity and success unexampled in the history of the world. Both countries felt a want hitherto unknown in their mutual transactions, (an extensive trade following the war;) a lack of something to represent values well ascertained; but from scarcity of bullion, its difficulty of transport, the risk attending its transmission, and the want of a new system of paper money, the subject agitated the minds of the whole business community. The English tried hanging extensively, and without effect; commissions of inquiry as to the invention or introduction of a method of producing bank notes were established—one under Sir William Congreve, to which all the

best artists of England were invited, and liberal rewards were offered. The most brilliant artists of the day in England promptly responded; beautiful drawings and engravings were submitted, and the collective artist voice of England answered that there was no protection against the forger and counterfeiter, unless by the highest expression of the arts of drawing and engraving, and the finest and most complicated lettering, coupled with the use of carefully prepared paper. The employment of the Rose engine was also suggested as an additional security. About the same time that the artists of England were thus exercising themselves, an American engraver, Mr. Joshua Perkins, was cracking the nut of the difficulty, which was nearly as great at that time in the American States as in England. (In a few years, but for Mr. Perkins, it would have been much greater.) With a thorough knowledge of the engraving art, Mr. Perkins, remarkable for skill in mechanics, and deep knowledge, for the time, in the management of steel, its carbonization and decarbonization, had come to the same conclusion as the English artists, viz: the importance of the introduction of the highest development of the commercial art of the day. He went much further, and proved that it was not only the greatest protection, but also successfully met the objections which arose from the statements of the English artists, who endeavored to prove that, no matter

how desirable, high art could not be employed, from the scarcity of skilled labor indispensable to that end. The only method suggested by them of production or reproduction was, that upon the receipt of an elaborate drawing, the engraver was to closet himself for months, if need be, and carefully produce a work of art which, after having the addition of the necessary lettering, would be published to the world as a bank note. The objections to this mode are several, and self-evident. First: Plates wear out rapidly, and the sickness or death of the artist would involve the destruction of the original plate when worn, it being next to impossible to make an accurate or successful copy; again, it would put the Government in the hands of the first artist who might make enormous demands to reproduce his own work; but the insuperable barrier existed, that there were not skilled artists enough in the country, nor probably in the world, to meet with the daily and increasing wants of the nation. The invention of Mr. Perkins, and a description of his method of reproducing the finest engravings, and their application, is worthy of another chapter.

CHAPTER II.

The preservation and reproduction of the finest work of the engraving art in "*petit*" was all of Mr. Perkins' invention. Knowing that the steel upon which the skilled and patient artist had curiously and cunningly wrought the careful tracery of face and form, of hill and dale, the classic and grotesque, the heroic and the humble, would, under the hand of the printer, soon become obliterated, he, fortunately for art, introduced, or rather invented, an application of well known chemical laws to the preservation of the art gem so carefully manipulated, and, by an inversion of his processes, multiplied it *ad infinitum*.

Without troubling the reader with the philosophical details of Mr. Perkins' process, we will simply state his manner of procedure. Into an air-tight box, filled with finely powdered animal charcoal, the glittering and beautiful piece of steel is imbedded; the metal box and its precious contents are then submitted to the action of an intense fire for several hours. The steel, previously robbed of its carbon, to render it soft enough for the steel instrument of the engraver, sucks, as it were, from the carbon by which it is surrounded, under the influence of the fiery god, that which it had formerly. Its hardness secured by the

workman plunging the reddened plate into water or oil. It now bids defiance to the instrument that previously could plough through its polished surface. The plate hardened, has become brittle, and, under a severe blow, would almost crumble; still its hardness enables it to despise friction, and the tablet is in a condition which may yield hundreds of thousands of impressions. The artist, pursuing his object, and not content with securing his original engraving, determines that it shall serve as the matrix of copies innumerable. On the periphery of a cylinder of steel, thoroughly decarbonized, and under the rolling pressure of the transfer press, all the delicate lines in *intaglio*, every scratch, cut, or even the nervous trace of the carelessly imposed hand, is, however, taken up *en relievo*. This roll, or cylinder, is, then, in turn, submitted to the hardening process, which, if successfully prosecuted, gives to the engraver a *tool* by which his art treasures can be multiplied millions of times.

It is deemed proper in this paper to avoid all technical, chemical, or philosophic terms, although the memory of Mr. Perkins may be wronged, when the deep thought, the careful analysis, and frequent experiment, is not sufficiently dwelt upon and lauded, for he not only made the egg to stand on its end, but accomplished what the artist world of France and England deemed an impossi-

bility. His process perfected, Perkins, and three other artist compatriots, went to England. That nation, still smarting, every portion of its human economy being touched, if not hurt, received them coldly—warmth was scarcely to be expected, and these gentlemen met, in their attempt to answer a national call, contempt, rudeness, and (but for the presence of some Americans of wealth) poverty, and, perhaps, a sheriff's prison. Even Sir WILLIAM CONGREVE, in his report, dispatches the invention of Perkins, and the labor of his coadjutors, with the expression, that "our American friends were ignorant of the state of the fine arts in England."

It is strange that Sir William should not have recognized the fact that the foreign artists did not wish to destroy the engraving art, but only to perpetuate its finest or best expression, to to make it comparatively free to the public, and give to the masses what was then only obtainable by the wealthy; and for the purposes of banks, either national or local, a security they never before possessed. First, by reproducing, with great rapidity and trifling cost, the finest works of the engraver; secondly, the absolute veri-similitude of each transfer from the original; thirdly, the division of labor, when bank notes were required, involving, without increasing the real cost, the labor of the following described artists and workmen:

The designer or modeler of the note or bond.

The draughtsman of the specific vignettes or ornamentations.

The etcher of the before-named subjects.

The finisher, or artist, who adds the final touch.

The letterers, (usually divided into three classes).

The artist, who cuts, by the geometrical lathe, the intricate denomination counters, etc.

The machinist, who presides over the process of carbonization, etc.

The transferer.

Now, here is named the staff indispensable to the production of a bank note plate, according to the system of Mr. Perkins. It is true, that very often artists may be found who unite in themselves the designer and the engraver, the etcher and the finisher, the chemist and the transferer, but no instance is recorded of any one man possessing sufficient knowledge to successfully produce a set of duplicate plates of such high artistic merit as has been required by the bankers of this continent for the last fifty years. The practice recommended by Sir William Congreve placed all the security in the skill of one man; the mode suggested by Perkins, Fairman, and other American artists, increased the difficulty and the security, by dividing the labor and multiplying the skill. By the intricate appliances of mechanical ability, comparatively easy to obtain, the labor of six months was reproduced in so many hours, and the creative

hand and mind was left to the production of fresh beauties, instead of slowly and drudgingly copying itself in its works. It is scarcely necessary to urge that no community should put itself into the hands of one man. In business, as in politics, there is but one result—the whim of the dictator "in purple and fine linen," or the whim, or death, of a single artist. The American artists, after being well informed of the fact that the English commission and the English artists had come to the conclusion that no good could come out of an American Nazareth, returned home, Perkins having first secured a patent, and established a house, under the title of Perkins, Bacon & Co.

CHAPTER III.

It was natural that the parent should reject words of wisdom or instruction from the child; England, "still unconquered and uncivilized,"* would not be instructed by a rebel scion, and continued to hang fellows for forgery, after first giving them an inducement and a premium for doing so, by rendering it so easy to be done. In the year 1813, a printer, a common workman, was hanged in

* Shee's Rhymes on Art.

Dublin, Ireland, for forgery, *id est*, printing forged notes; and on the same day, before the body of the culprit was quite cold, his son was arrested while working the same press, and committing the same crime, for which his father had suffered the penalty of the law. The son was hanged. But if the Government of England had continued hanging offenders against its paper currency until this day, it would not have lessened the commission of the crime. It was forced, as much by its wants as the example of foreign countries, to effect a radical change in its mode of issue, and, by rendering the crime more difficult of execution, gave protection to the public. Twenty-five years after the visit of Mr. Perkins to Great Britain, the National Bank of Ireland had adopted his plan in its entirety; and nearly all the banks of England adopted some modification, when not used completely. All the American States, and the British American Provinces, had, from its invention, their bank notes produced in that way. The enormous amount of employment thus thrown into the hands of the engravers, who devoted their attention and skill to what is technically termed "bank note engraving," enabled them to spend large sums in the production of beautiful specimens of art, and subjects in portraiture, history, mythology, landscape, etc., became common to the faces of the circulating bank bill. At the same time, no effort was spared

to improve or devise instruments of the utmost intricacy for the production, mechanically, of ornanaments, the forging of which, by the human hand, was an impossibility. In short, no effort was left unmade to guard the public, that the highest expression of art, combined with the greatest mechanical ingenuity, could afford. One of the strongest evidences of how completely baffled the forger had become, was the report, some seven years since, of the Secretary of the Treasury of the United States, wherein it was stated "that the number of frauds against the metallic currency, as compared to those against the paper circulation, was as twenty to one in favor of the bank notes as a public security."

That foreign nations have recognized the value of the invention, and the extent of its development, is proved in several instances. During the residence of ex-Governor Pickens, of South Carolina, at the Court of Russia, through his intervention, probably, the entire paper currency of the empire was changed into one made in America, and a large and completely fitted out establishment, with artists and machinists, was sent out to St. Petersburg. The Emperor of Brazil, also, adopted a similarly made issue. The British Government, for its colonial postage stamps, King Otho; for the national notes of the Kingdom of Greece; and many of the South American Republics; all, by their adoption

of the mode, and intrusting the execution of their notes to the American engravers, gave the highest testimony of the excellence of the system employed. Despite, however, of the many advantages that bank note plates made by transferring from the original hardened steel possess, yet many countries continue to follow the old methods, as in the case of the Bank of England, where the printing of the notes is done from raised surfaces, or blocks, similar to brass stamps that book-binders use for ornamenting the covers of books; the main protection being in the peculiarity of the paper, and the system of numbering, the English bill never being for a smaller sum than five pounds sterling, and when received for redemption is never reissued. Bank of England notes seldom find their way into the hands or pockets of the working or laboring people, their use being mostly confined to the wealthy or mercantile classes. By that means, when a fraudulent note is issued, it can be (comparatively) easily traced to the source it sprung from. Probably their excellent police system, and the certainty of severe punishment being inflicted on the criminal when caught, may assist in the prevention of forgery. Extensive frauds have, however, occurred, and thefts of paper are not uncommon.

In the German States, on the Continent of Europe, wood cuts, with mortices for type letters,

are much used, and are of the rudest execution; the paper used in the printing being made under royal authority, the printing itself is often in a combination of colors, prepared by eminent chemists, in national laboratories, and their composition preserved as a profound secret.

CHAPTER IV.

Lithography, or the art of printing on stone, has of late years become extensively used in various ways. Its simplicity, its easy adaptation to every variety of pictorial representation, its cheapness, the facility of reproducing or multiplying itself, has rendered it a most useful addition to printing processes, and a formidable rival to the more ancient, but more perfect, art of engraving on copper and steel.

There are three departments of lithographic production which are all in general use, and are totally distinct from each other, having each its peculiar merits and facilities for supplying the wants of the public. The first is used exclusively for pictorial purposes, from the rough caricature to the highly finished and artistic historical picture. The admirable chalk drawings of Julien Lemercier, of Paris, the gorgeous chromo-lithographs, are fa-

miliar to all. This branch of the art affords fine scope for artistic talent, and possesses a peculiar charm for all lovers of the picturesque, and has been brought to a high point of perfection by its disciples in France and England.

Second. Engraving on stone is found useful principally in the production of topographical maps, book illustrations, scientific diagrams, labels, etc.; it is practiced chiefly in Germany, where it has mostly superceded engraving on steel and copper. It is, however, incapable of highly finished productions, and the attempts at pictorial representations are feeble, flat, and altogether wanting in effect.

Third. This branch of lithography, which is nearly dependent on the efforts of the steel engraver, and has been in vogue for many years, principally in England, and of late introduced to this country, where it has met with very great success, is simply the transferring of impressions of engraved plates to stone, and printing from the transfer. The enormous multiplying power of this mode will readily be perceived by the reader, on being informed of the fact that an engraved steel plate will print, say twenty-five thousand copies, and each one of these impressions, when transferred to stone, will yield, when printed by a careful hand, six thousand. This branch of the business is devoted mainly to what is technically called "commercial work," such as bank checks, bills of

exchange, promissory notes, and all the blank documents required in commercial transactions. Notwithstanding the cheapness and utility of this method of reproduction, it carries upon its face the inevitable stamp of inferiority, and has never been brought into requisition by banks of issue in this country for their notes of circulation.

An impression from a steel plate, taken on the enameled paper of the lithographer, however beautiful and perfect the engraving may be, when laid on the stone, and passed through the press re-repeatedly, under a powerful pressure, loses a great portion of the delicate tracing and finish of the lighter parts, as well as the rich velvety tones of the shadows of the original; the sharp, well defined lines of the artist's "burin'," the free and flowing expressions of the practiced etcher in landscape, the clear and carefully traced details of the human form, the delicate gradations of light and shadow in a sky or cloud, are partially lost, and what remains, is but a grey, broken mass of lines, offensive to the eye of the true connoisseur; again, impressions from stone are liable to the same objections as may be urged against all "surface printing," the paper receiving a mere film of ink from stone, and, consequently, soon obliterated by constant handling; it is a well known fact that the quantity of ink deposited on the paper from an engraved steel or copper plate, would be sufficient to

produce ten or more from the transfer on stone; this fact accounts for the great durability, so to speak, of the engraved bank note; the ink used, being a pure carbon, will retain its color and sharpness as long as the paper upon which it has been deposited will hold together. Notes which were issued by our Government at the commencement of the war, engraved by Keatinge & Ball, were in circulation, (having been re-issued many times,) up to the time of funding them, while stacks upon stacks of the lithographic issue were cancelled or destroyed, never being in a fit condition for re-issue, even after a few months' circulation.

The pressing wants of our Government have forced into use this process of lithography, in which, it is easy to perceive, there is little protection, and, unfortunately, offers a premium to crime by simplifying its commission.

As before explained, there is, in the preparation of bank notes, a great number of skilled and accomplished artists engaged; by lithography, the ease with which copies of the works of these artists are produced, or rather reproduced, is so great that its merits as a distributer of their productions becomes the strongest reason why its employment should not be resorted to whenever or wherever a more elaborate or complicated method of making a bank note can be adopted. The banks and bankers of Europe and America have, long ago, pronounced against it,

unless where some specific protection was afforded outside the art, or mechanical security offered by the mere printing or engraving.

Another consideration in connection with this subject demands the attention of all interested in the purity or genuineness of our paper circulation. In an establishment, either Governmental or private, having authority to issue paper money, the abstraction of sheets or notes by officers or clerks is of very rare occurrence, the individuals employed in such institutions being, in all cases, men of known probity and under heavy bonds. The history of the bank note engraving and printing establishments of America, furnishes the remarkable fact, that fraudulent conduct on the part of employees has seldom or never occurred; the system adopted, being the result of long experience, has rendered theft or abstraction, to any extent, quite impossible; besides, it has been found that persons regularly employed in the prosecution of that business, have always been known to be extremely zealous in the prevention of fraud as well as in the detection of the counterfeiter.

In lithography, or where movable types are used, the case with which fraud can be committed, unfortunately, renders crime too frequent. An impression of the most elaborate plate, taken with what is known as "transfer ink," easy of access and not at all difficult to make from the abundant receipts and instructions published, can, if a workman

is so disposed, be taken off, concealed, taken elsewhere, transferred to stone, and copies, to any extent, put into circulation, differing from the genuine only in the signatures, which afford no protection to the public, and require the keen-eyed expert for their detection. Knowing that great frauds have been committed, have we not a perfect right to doubt the security of a system that gives to a common workman the opportunity as well as the temptation of enriching himself, with so little risk, and so few chances of detection, and of the punishment due to his crime?

CHAPTER V.

The different methods employed as safeguards against the efforts of the counterfeiter have been the subject of much thought and investigation among the members of the various establishments of bank note engravers. Many have been from time to time adopted and abandoned but the most effectual at the present are believed to be: First, the subdivision of labor in the engraving department, which, with the employment of the best talent, obtains the highest degree of perfection in the various productions of that branch, thereby rendering it impossible for one man, successfully, to imitate them.

Second, the repetition of the denominations of the note in a variety of ways, and carried to any extent by means of the transfer press. This work may be incorporated with the body of the note or printed from a separate plate in a color. This is found to be a great addition to its security; the original word or words being engraved with a view to its perfection, is repeated to infinity, if necessary, and absolute similarity is obtained throughout the whole, which would be impossible when done by hand. Very beautiful "denomination counters" are produced in a similar manner, and present still greater difficulties to the counterfeiter.

Third, the Medallion Ruling Machine. The beautiful work produced by this machine, so much admired by the lovers of classic and the antique, was in very general use twenty years ago, and considered, at that time, as an effectual bar to imitation, but is now considered less as a security than as a means of ornamentation. The machine is of such simple construction and so easy to be obtained, that its use, as a security, has been nearly abandoned.

Fourth, the Geometric Lathe has been esteemed, at all times, as the sheet anchor of public security against the dangers of forgery. This wonderful and truly "eccentric" machine has a power of production, as regards change and variety of combination and effect, that is really amazing. The least change

of a wheel of the eccentric, or turn of a set screw, produces a new pattern that shames the kaleidoscope. It defies the efforts of the mathematician to calculate the extent of its variations; the lines intertwining and crossing each other at all angles are perfection itself, conforming to any shape the operator chooses to adopt; and when the transfer press is brought to its aid, to give additional change to the character of its work, human ingenuity fails in the attempt to produce an imitation.

Fifth, the Transfer Press is the triumph of Mr. Perkins' invention; it is the foundation upon which the whole superstructure of the art of bank note engraving rests. It may be likened to the lever of Archimedes, in its power to "move the world." A powerful compound lever over a solid bed of iron, upon which the hardened plate is placed, the soft cylinder or "die" then placed in position, the ponderous lever closes on it, a rolling motion forward and backwards is communicated, and in a few minutes the ductile metal receives the reverse of the engraving with the certainty and accuracy of the electrotype battery. Recent improvements have added greatly to the general utility of this machine. Many of the most beautiful and elaborate ornaments on our notes are produced by transferring process, and though the production of new plates and the "retouching" of those worn by the hand of the printer, brings it into daily and hourly requisition, yet it knows no

"idle time" in the various other duties it is expected to perform.

The competition for patronage which has always existed among the various establishments engaged in the business of bank note engraving, which, while it gave rise to many important mechanical improvements, and impulse to the creative faculties of the artist, yet in the inordinate desire for the introduction of novelties, has, in some respects, vitiated the tastes of the community. This is observed in the over-crowded, many-colored, badly-modeled notes of the present day, giving to the bank note much the appearance of a fanciful label on a cologne water bottle; and so far from adding to the difficulty of counterfeiting, it is argued that a poor imitation of one of these parti-colored notes is more likely to be successful than that of a note of a more simple design. A counterfeit is oftener detected at a single glance than by close examination; that is to say, the first look at a note determines either its genuineness or its doubtful character, and it is only on close examination that certainty is obtained; the least change, either in general appearance or any of the details, will be perceived instantaneously, where the embellishments are well placed and distinct from each other, while the gorgeous, calico-patterned note of present fashion fatigues and confuses the eye, depriving that organ of its keenness of observation, and exposing its owner to loss and vexation.

Perfection, or an approximation to it, in every department or detail connected with the production of a bank note, is the true safeguard against fraud. The artist, the machinist, the printer, and every operative employed, should be of the highest ability. The thousand and one different materials used should be of the best of their kind, all and each of these contributing to the final result; thus, rendering every step towards the successful imitation of a note more difficult, as the lack of any one of these many requirements has a marked effect upon the efforts of the forger, and baffles the ingenuity of the most skillful.

It is in the want of material that the prosecution of bank note engraving and printing in the Confederacy has met with the greatest difficulties. Many of the most important articles are not to be obtained in Europe of the quality desired; others have to be improvised, as it were, on the spot. The swamps of South Carolina furnish the vegetable carbon for the inks, and the hills of North Carolina and Virginia, the oils. Plates and dies made from the crude steel. The manufacture of machinery and presses gives employment to mechanism of an entirely novel character in the South; in fact, to establishments of this kind, necessity has added to the machine shop the laboratory of the chemist.

One of the peculiarities of this business is, that

time, as well as *capital*, is necessary for its successful prosecution, where large demands are made upon it; the accumulation of the labor of the artist, the immense variety of embellishment required at his hands can be obtained only by patient and persevering labor. The progress made, under these difficulties and peculiarities, in the Confederacy is, therefore, gratifying, and gives assurance that when the clouds of war are dissipated, the commerce of the world admitted again to our silent wharves, and peace, with healing wings, brings health, activity, and her innumerable blessings to the once happy people of the Confederacy, this important branch of industry will take its legitimate rank, bestowing its benefits upon the commonwealth, as well as honor and profit upon those engaged in its prosecution.